

## Section 2 – Tools and Equipment

### Introduction

This camper could be constructed with basic hand tools, but I wouldn't want to try it. I have a fairly well equipped workshop, so I had most of tools on hand. I did buy a few specialty tools, mostly for constructing the steel chassis. I already had a cordless drill, but bought two more cheap ones from Harbor Freight and they were well worth the extra money spent. I was able to have one drill for drilling and another for driving screws without changing bits (but there's a tool that makes this easy).

I consider most tools bought to be an investment for future projects. A few, like metal working tools, I may not use much in the future, but then, I didn't spend very much on these. And, for those tools, I bought cheap ones. One, my \$17 Harbor Freight metal grinder served to both cut and grind my chassis metal. It finally failed completely, but not until after I was finished with the chassis. You get what you pay for.

I'll list tools in two categories. First, minimum tools required, in my opinion. That doesn't mean that you can't construct without them, but they will make the job easier. I'd think that most home workshops would contain most of these items. Second, optional tools that really do help make the job easier and provide better quality control.

### Basic Tools

Saws:

- Hand saw
- Hack saw
- Circular Saw
- Jig Saw
- Table or Radial Saw (table saw is my personal choice)

Drills/Screwdrivers

- Power Drill (at least one, cordless preferred)
- Cordless screwdriver (although the power drill can perform this service)
- Regular and Phillips head screwdrivers.
- Hex drive screwdriver bits
- Regular and countersink drill bits
- Forstner or spade bits for countersinking holes for carriage bolts

Sanders

- Portable Belt sander (not absolutely essential, but helpful)
- Random orbital sander (I consider this an essential item)

Router (You can get by without one, but it helps) A small trim router is especially handy.

Hammer (16 oz. is standard. A 12 oz is easier to use for some applications)

Finishing equipment

- Paint brushes, pads, roller
- Sanding block
- Sanding sponges
- Tack cloths

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Electrical tools/equipment

- Volt/ohm meter (even a cheap one will do)
- Soldering iron
- Wire stripper
- Heat shrink (varying sizes)

Set of SAE box/open end wrenches

Ratchet and SAE sockets

Clamps (C-type, bar clamps, ratchet clamps, etc...you can't have too many clamps)

Ratchet straps (20' preferred...two are needed)

Measuring tape (12' minimum)/rulers/straight-edge

Caulking gun

Utility knife

Saw horses (2 sturdy ones)

Bubble Level

Safety Equipment (safety glasses or goggles, hearing protection, dust/paint masks, etc.)

I may have left some basic tools out of the list above. If you think of any, please email me and let me know so I can add them.

### Optional Tools

Drill press – I found my drill press to be very helpful, especially in drilling the holes for my swing-up jack stand on the chassis. It also makes countersink holes for carriage bolts more accurate. A drill stand for a hand drill will work almost as well.

Planer/Jointer – This tool helps you obtain a more professional look on your cabinetry without having to do as much sanding. It's not essential, but nice to have. I always wanted one and this project was my justification for buying one.

Bench sander – even though I have both belt and RO sanders, I bought the Harbor Freight 36" belt/6" disk bench sander (on sale for \$69). I used it a lot.

Air Compressor and air tools – I've had an air compressor for many years. If you buy one, make sure it will power all of your air tools.

- Brad Nailer – These are very helpful for cabinet work and installing paneling and to help secure the skin.
- Cut-off tool – These are helpful for cutting trim and small metal pieces, although a hacksaw may do the job.
- Paint guns – Spraying paint makes a nicer finish than rollers or brushes. The cheap Harbor Freight gravity feed gun works well with most thinner finishes, but doesn't handle latex very well. You need a pressure feed gun for thicker paints.
- Air-ratchet – These are very helpful when working under the trailer to tighten nuts on the floor hold-down bolts. They also make it easier on my arthritis, not having to work a regular ratchet.

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Bench grinder – They are helpful for shaping trim and other metal items

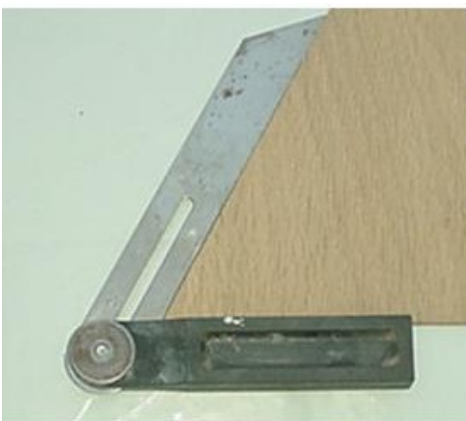
Band Saw – This tool is helpful in shaping the curved roof edge framing, although a jig saw will do the job. My old band saw was kaput, so this project was a good excuse to replace it. I bought the small Ryobi bench model that works very well and doesn't take up floor space.

Angle Finder – The angle finder is a level device that measures angles on a circular dial. It's extremely useful in determining the angles of the front and rear wall spars. It's pictured in my Tools photos on the CD and below.



Above - Measuring the 3 degree down angle of the A/C box at the rear of the trailer.

Angle transfer tool – This is a simple tool that measures angles and lets you transfer them to paper, wood, etc. It's also pictured in my Tools photos and below.



The knob tightens to hold the angle measured (left) The tool folds up to hang on a hook (right).

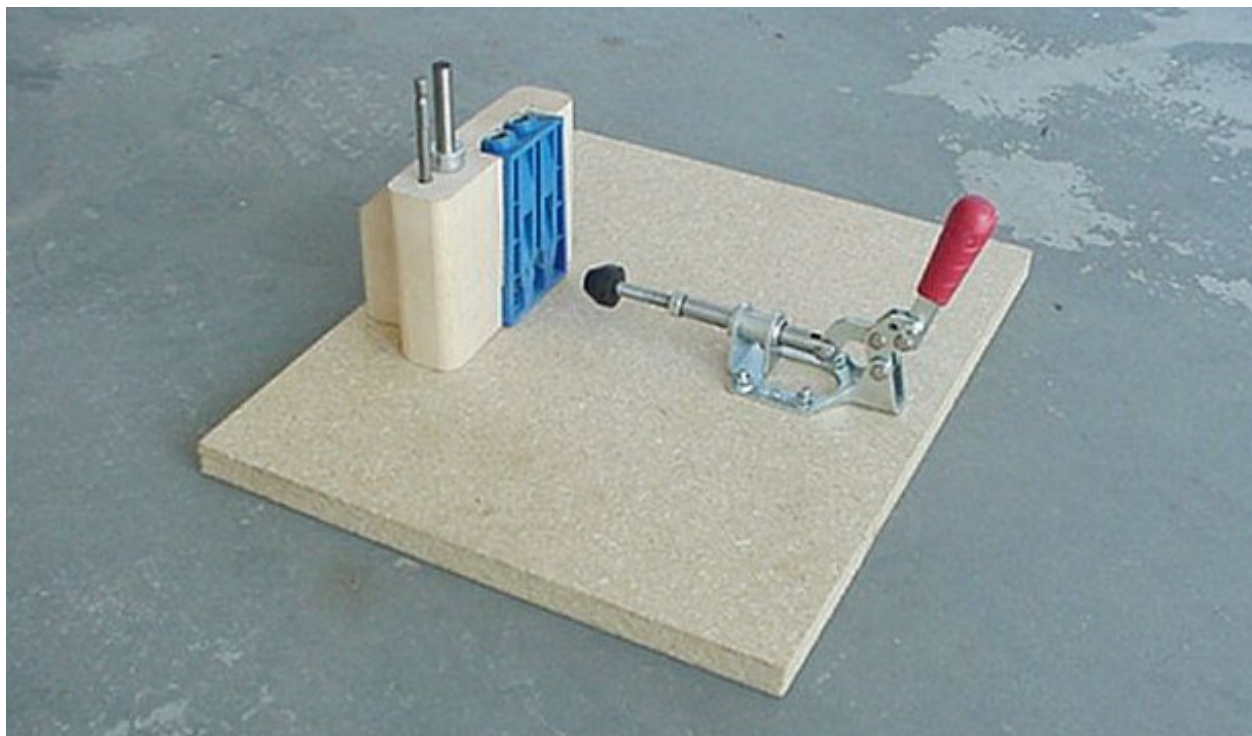
Combination Countersink/drill bit – several companies make this. Mine is by Makita and comes with three bit and countersink hole sizes. It lets you reverse a drill bit and

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countersink bit without having to remove the bit holder from your drill. It is also pictured in the Tools photos and below.



Pocket Hole Jig – The most popular is the Kreg jigs. I have the basic 2-hole jig, which I've mounted in a wood and particle board base with a clamp to hold the wood tight against the jig for drilling as shown below and in the Tools folder



Power miter saw (sometimes referred to as a chop saw) – cutting miter corners and cutting off lengths of framing is easier with this tool than using the table saw. I highly recommend having one for your build.

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And, if you are making your own chassis, you will need the following:

- Welder and supplies
- In addition to the safety equipment stated above, heavy gloves
- Angle Grinder for grinding bevels and smoothing cuts (will also cut with a cutting disk)

I'm sure that there are many other tools that would make the work easier and we could go on and on listing them. But, I think I've covered most of the basic and optional tools you'll need. I didn't mention the obvious things like pencils, pens, string, nails, screws, etc. Some of these are in the parts list anyway.